

## CLAIMS

1. A manufacturing method of a resin roll comprising:

a step of forming a lower winding layer comprising a fiber-reinforced resin on an outer periphery of a roll core;

5 a step of forming an outer sleeve comprising a synthetic resin on an outer periphery of said lower winding layer, wherein said step of forming the lower winding layer comprises a step of transferring a tape-shaped non-woven fiber aggregate in which a fiber material mainly comprising inorganic fibers is coupled with a binder in a predetermined direction so as  
10 to be wound around the outer periphery of said roll core, and a step of impregnating said non-woven fiber aggregate with a liquid thermosetting resin while said non-woven fiber aggregate is being transferred.

2. The manufacturing method of the resin roll according to claim 1,  
15 wherein said lower winding layer has a laminated structure comprising an inner layer and an outer layer, wherein

said step of forming the lower winding layer comprises:

a step of forming said inner layer of the lower winding layer on the outer periphery of said roll core, and

20 a step of forming said outer layer on said inner layer on said roll core, and

said outer layer is said non-woven fiber aggregate impregnated with the thermosetting resin.

25 3. The manufacturing method of the resin roll according to claim 2, wherein said inner layer comprises a layer in which a thread, a roving or a cloth tape comprising inorganic fibers or organic fibers is impregnated with a liquid thermosetting resin and wound around said roll core.

30 4. The manufacturing method of the resin roll according to any one of claims 1 to 3, wherein said step of forming the lower winding layer comprises a step of lowering viscosity of the thermosetting resin material after said non-woven fiber aggregate is impregnated with said liquid thermosetting resin.

5. The manufacturing method of the resin roll according to claim 4, wherein the viscosity of said thermosetting resin is lowered while said non-woven fiber aggregate is being transferred.

5 6. The manufacturing method of the resin roll according to claim 4, wherein the viscosity of said thermosetting resin is lowered while said non-woven fiber aggregate is being wound around said roll core.

10 7. The manufacturing method of the resin roll according to any one of claims 1 to 6, wherein said fiber material comprises glass fibers.

8. The manufacturing method of the resin roll according to any one of claims 1 to 7, wherein said non-woven fiber aggregate is a non-woven fabric or a paper formed of said fiber material.

15 9. The manufacturing method of the resin roll according to any one of claims 1 to 8, wherein said non-woven fiber aggregate has a length-direction tensile strength of 50N/15mm or more.

20 10. The manufacturing method of the resin roll according to any one of claims 1 to 9, wherein said non-woven fiber aggregate has a basic weight of 30g/m<sup>2</sup> to 100g/m<sup>2</sup>.

25 11. The manufacturing method of the resin roll according to any one of claims 1 to 10, wherein an inorganic filler is mixed to said thermosetting resin.

30 12. The manufacturing method of the resin roll according to any one of claims 1 to 11, wherein said outer sleeve is formed on said lower winding layer through an adhesive layer.

35 13. The manufacturing method of the resin roll according to any one of claims 1 to 11, wherein said outer sleeve is formed directly on said lower winding layer without an adhesive layer.